

REMARKS

Discussion of Specification

As a preliminary matter, the specification has been amended to correct minor typographical errors. On page 1, lines 16 and 21, "29-31" is replaced with --30-32--; and on page 6, line 21, the second occurrence of "2c" is replaced with --2d--. No new matter has been added by this amendment to the specification.

Discussion of Claims

In the Office Action, claims 1-5 stand rejected under U.S.C. § 103(a) as being unpatentable over admitted prior art provided by applicant in Fig. 2.

In response thereto, new claims 6-9 have been added. Accordingly, claims 1-9 are now pending. Following is the discussion of the patentability of each of the pending claims.

Independent Claim 1

Claim 1 describes a control apparatus for a gas analyzer system. The gas analyzer system includes a plurality of gas analyzers. Each gas analyzer has a gas analyzing unit with a plurality of outputs for analyzing a respective gas, a plurality of AD converters having a plurality of inputs respectively connected to the outputs of the gas analyzer unit according to a connection condition, an internal bus connected to an output of each AD converter, and a memory unit connected to the internal bus for storing a connection condition table which includes information for the connection condition. The control apparatus has a CPU bus connected to the internal bus of each of the gas analyzers and further has an analyzer processing unit. The analyzer processing unit has a CPU connected to the CPU bus, and the CPU operates in accordance with a program for controlling each of the gas analyzers.

As discussed in the specification of the present application on page 3, lines 23-31 and page 4, lines 1-30, the connection condition table enables the CPU in the analyzer processing unit to regard the plurality of different gas analyzers (i.e. NDIR, FID, CLD) to be identical. Among the advantages associated with such a configuration is that a single program and a single CPU is capable of controlling a plurality of gas analyzers having differing hardware configurations. Furthermore, because the hardware information inherent to a particular gas

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analyzer is controlled in the form of a table, the gas analyzing system can be upgraded by simply writing a table of connection condition coordinates for a new gas analyzer or by replacing the memory unit with a new memory unit having a rewritten program. Still further, the gas analyzer system is greatly simplified because there is no need to provide each gas analyzer with its own CPU.

The admitted prior art provided by applicant and shown in Figure 2 describes a control apparatus for a gas analyzer system (20) having a plurality of gas analyzers (30, 31, 32). Each gas analyzer has its own CPU (26a, 27a, 28a) and its own memory unit (26b, 27b, 28b). The memory unit has a program for operating the CPU. Each memory unit describes the hardware information inherent to its particular gas analyzer. As discussed in the specification of the present application on page 2, lines 22-29 and page 3, lines 1-7, each memory unit contains a program which is specifically tailored for the hardware of its respective gas analyzer. Thus, it is necessary to compose programs for the individual gas analyzers and to write these programs in the memory unit (ROMs). When utilizing a new gas analyzer having a different number of sensor and performance, the number and performance of the AD converters must be changed. The entire analyzer substrate (26, 27, 28) needs to be redesigned or the program for the CPUs needs to be recomposed. One of the problems with such a configuration is that a great deal of time and labor is required when reconfiguring the gas analyzing system. This requirement is particularly disadvantageous for when a gas analyzer system is already in use by a customer.

It is apparently conceded in the Office Action that the admitted prior art provided by applicant and shown in Figure 2 does not disclose or suggest a memory unit for storing a connection condition table which includes information for a connection condition. The admitted prior art, on the other hand, has a memory unit for storing programs which control its respective gas analyzer. It is respectfully submitted that it is improper to reject claim 1 based on the claim that it would have been obvious to one of ordinary skill in the art to have a program condition table in a programmable memory unit. The Office Action fails to point to anything in the present application that would suggest that one of ordinary skill in the art would make the apparent proposed modifications. To the contrary, any such rejection would impermissibly use "hindsight reconstruction to pick and chose among the isolated disclosures in the prior art to deprecate the claimed invention." In re Fritch, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992). As there is no

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suggestion in the Office Action for the proposed combination, any rejection of claim 1 would fail to present a prima facie case of obviousness.

Accordingly, it is respectfully submitted that claim 1 is in condition for allowance.

Independent Claim 2

Claim 2 describes a gas analyzer system having a plurality of gas analyzers. Each gas analyzer has a plurality of outputs, a plurality of AD converters, an internal bus connected to the output of the AD converters, and a memory unit connected to the internal bus for storing a connection condition table which includes information of the connection condition. A CPU bus is connected to the internal bus of each gas analyzer. An analyzer processing unit has a CPU connected to the CPU bus, and the CPU operates in accordance with a program for controlling the gas analyzers.

For the same reasons discussed above in regards to claim 1, it is respectfully submitted that claim 2 is in condition for allowance.

Dependent Claims 3 and 4

Dependent claims 3 and 4 depend from claim 2 and are similarly patentable. It is respectfully submitted that these claims are in condition for allowance.

Independent Claim 5

Claim 5 describes a method for controlling a gas analyzer system. The gas analyzer system has a plurality of gas analyzers. Each gas analyzer has a gas analyzer unit with a plurality of outputs for analyzing a respective gas, a plurality of AD converters each having a plurality of inputs respectively connected to the outputs of the gas analyzer unit according to a connection condition, an internal bus connected to an output of each AD converter, and a memory unit connected to the internal bus for storing a connection condition table which includes information for the connection condition. An analyzer processing unit is provided. The analyzer processing unit includes a CPU connected to a CPU bus, and the CPU bus is connected to the internal bus of each of the gas analyzers. The connection condition table is stored in the memory unit of the gas analyzers and read. A signal output is read to the AD converter in

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accordance with the connection condition table which is stored in the memory unit, thereby reading out the input from the gas analyzer unit.

For the same reasons discussed above in regards to claim 1, it is respectfully submitted that claim 5 is in condition for allowance. Furthermore, claim 5 includes reading the connection condition table of all the gas analyzers with the CPU (2a) of the analyzer processing unit (2). In the system proposed in the Office Action, CPUs (26a, 27a, 28a) of each respective gas analyzer would be used to read the proposed connection condition table.

Independent Claim 6 (Newly Added)

Claim 6 is similar to claim 2 and further describes the CPU of the analyzer processing unit being a single CPU which directly reads the connection condition table stored in the memory unit of the gas analyzers without the aid of additional CPUs being coupled to the internal bus of each gas analyzer.

For the same reasons discussed above in regards to claim 1, it is respectfully submitted that claim 6 is in condition for allowance. Furthermore, it appears that the system proposed in the Office Action does not disclose or suggest a single CPU which directly reads the connection condition table stored in the memory unit of the gas analyzers without the aid of additional CPUs being coupled to the internal bus of each gas analyzer. On the other hand, the proposed system would include individual CPUs which would read the connection condition table of its respective gas analyzer.

Dependent Claims 7 and 8 (Newly Added)

Dependent claims 7 and 8 depend from claim 6 and are similarly patentable. It is respectfully submitted that these claims are in condition for allowance.

Independent Claim 9 (Newly Added)

Claim 9 is similar to claim 5 and further describes directly reading with a single CPU the connection condition table stored in the memory unit of the gas analyzers without the aid of additional CPUs disposed within each of the gas analyzers.

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For the same reasons discussed above in regards to claim 5, it is respectfully submitted that claim 9 is in condition for allowance. Furthermore, the system proposed in the Office Action does not disclose or suggest directly reading with the single CPU the connection condition table stored in the memory unit of the gas analyzers without the aid of additional CPUs disposed within each of the gas analyzers. In the proposed system, it appears that the connection condition table would be read by the respective CPU found in each of the gas analyzers.

CONCLUSION

Accordingly, issuance of the Notice of Allowance at an early date is in order and is respectfully requested. If it is felt for any reason that direct communication with Applicant's attorney would serve to advance prosecution of this case to finality, the Examiner is invited to call the undersigned Ronald S. Tamura, Esq. at the below listed telephone number.

The Commissioner is authorized to charge any fee which may be required in connection with this Amendment to deposit account No. 16-2230.

Respectfully submitted,

Dated: December 21, 2000

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